Core Assessment #2 review:

L_1 = before L_2 = after $L_3 = L_2 - L_1$

Conditions:

STATE	**CHECK**
1) Paired Data	1) before and after = paired
2) SRS	2) assumed representative
3) Normal pop of differences or $n_d \geq 30$	3) norm. prob. plot of the differences (L_3) is approx. linear => normal data
4) pop of diff $\geq 10*n_d$	4) there are more than 200 subjects (dogs)

Conditions met --> t-distribution --> 1-sample paired t-test

Hypotheses:

Ho: $\mu_d = 0$

Ha: $\mu_d > 0$

μ_d = mean of the differences of after -- before training

Mechanics:

$$t = \frac{3.85 - 0}{\frac{5.324}{\sqrt{20}}} = 3.234$$

$P(t > 3.234 \mid df = 19) = 0.0022$

Conclusion:

* We reject Ho because p-value of 0.0022 < alpha = 0.05

* We have sufficient evidence that the average difference between before and after training is greater than 0.

* Therefore the training did improve the dogs ability.